Cranston Plant

CIBA-GEIGY Corporation
P.O. Box 2055
Providence, Rhode Island 02905
Telephone 401 467 8200

Shipping Address:
180 Mill Street
Cranston, Rhode Island

CIBA-GEIGY

NAME: Ciba Geigy
I.D. NO.: RID001194323
FILE LOC: R-9
OPER:

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Mr. Thomas Wright, Chief
Air and Hazardous Materials Division
Department of Environmental Management
Davis Street
Providence, Rhode Island 02903

Dear Mr. Wright:

This letter is intended as an outline guide for a cooperative odor control program between CIBA-GEIGY and the Department of Environmental Management to resolve neighborhood odor concerns which have surfaced recently. Historically, those odor concerns which have caused us the greatest difficulty in control are those which are related to our efforts in environmental conservation and protection, the Wastewater Treatment Plant, our water conservation project and our Zinc Pretreatment System.

The principal odor source over the years has been the Wastewater Treatment Plant where we daily treat over a million gallons of water prior to its discharge to the Pawtuxet River. A number of modifications have been made to the Wastewater Treatment Plant to control odors especially at the 50 thousand gallon sludge holding tank and the trickling filter. The long term resolution to this problem will be the tie-in with the City of Cranston's treatment plant presently being expanded. This will allow us to shut down our biological on-site operations and will resolve problems concerning biological odors. In the meantime, in order to assure ourselves and our neighbors that we have taken reasonable action to minimize these odors in the meantime, we will work with the Department of Environmental Management Water Quality Section to review possible odor sources and improve our water management techniques where possible.

A second odor concern involves our water conservation project in which seven and a half million gallons per day of cooling water are recycled. In order to prevent algae buildup and subsequent odor problems resulting from biological growth on the cooling tower slats, we treat the cooling water on a regular daily basis with swimming pool chlorine (calcium hypochlorite). This biocide effectively controls algae buildup and prevents biological odor formation. However, the material reacts with a trace impurity in an antifreeze present in our cooling water to produce an odor. The resolution of this problem involves use of a biocide which will effectively control the algae without producing odor. In this area we also propose to work with members of the Department of Environmental Management Water Control Section in selecting an alternative algaecide which will be strong enough to prevent algae growth in the cooling tower and yet be acceptable for discharge into the Pawtuxet River.

The third potential odor source is our Wastewater Pretreatment process in which some fifteen thousand pounds per day of zinc by-products are carefully controlled to maintain zinc discharge levels required by our EPA Permits. In recent years we have made significant modifications to the system to improve odor control. The material is handled in such large volume that a railroad gondola car is used to recycle the zinc to a facility where the material is recovered. Over 1.8 million dollars have been spent developing a system to completely enclose this gondola car in a building, and the building has been equipped with an air scrubber so that the air circulated into the building is purified before discharge. These odor control measures have been successful in reducing the odor, but because of the large volume of material which is handled, it has not yet been possible to completely eliminate it. In the last few weeks significant modifications have been made to improve the efficiency of the scrubber and to ensure that the building is kept closed at all times so that the scrubber is used to its maximum effectiveness.

We have also been successful in identifying a by-product which is co-isolated with the zinc which may be responsible for the odor. We have plant process modifications proposed and more stringent specifications on incoming raw materials to reduce this by-product. We are confident that these process modifications will eliminate the odor at the source and therefore provide the most cost effective and efficient odor control possible. In the interim, we are endeavoring to purchase a cover which can be used to completely enclose the gondola car and reduce the level of odor especially during shipment of the by-product back to the recycle facility. Should these modifications not result in significantly improved odor control, we will expand our technical and engineering efforts to scrub all potential emissions from the zinc handling operations as far as possible.

Another area of concern involved ethyl acrylate handling operations during production of one of our products. Acrylates have been handled for many years at the Cranston Plant along with other odorous materials. In each case, the chemist or engineer responsible for the process identifies the necessary control techniques and utilizes neutralizing scrubbers wherever necessary to control these odors and avoid adverse impact on our neighbors. In the case of ethyl acrylate the odor control scrubber worked very well and over 99% removal efficiency was measured in the process operations. There were, however, some mechanical handling concerns during a portion of the campaign. We have taken necessary action to eliminate these odor sources and plan to resume manufacturing of this product.

To ensure ourselves and our neighbors that necessary odor control has been effective, we propose to monitor the neighborhood on a regular twenty-four hour basis during a trial campaign. In order to assure ourselves that any neighbor concerns relative to odors are indeed related to acrylate, we propose that members of your department join with us in this monitoring program. It is of some concern that an increase

in odor in the neighborhood from one of the identified sources listed earlier might coincidentally occur at the time of startup. We wish to ensure that any odor concerns about ethyl acrylate are promptly and appropriately addressed and we propose to monitor the ambient air and the process emissions from this operation during the trial period to assure ourselves that proper odor control has been established.

We share the concern of our neighbors relative to the odors and will work cooperatively with your Monitoring Section to ensure that there are no unacceptable level of odors in the neighborhood. We believe in being a good neighbor and as a good neighbor will continue our efforts to resolve these concerns.

Sincerely yours,

James E. Crowley, Manager
Safety, Health & Environment

JEC/ml